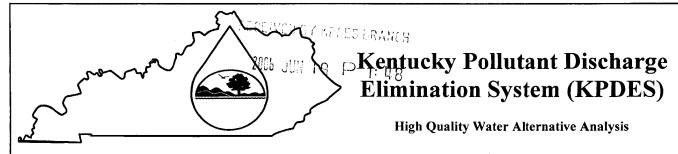
### **KPDES FORM HQAA**



The Antidegradation Implementation Procedures outlined in 401 KAR 5:030, Section 1(3)(b)5 allows an applicant who does not accept the effluent limitations required by subparagraphs 2 and 3 of 5:030, Section 1(2)(b) to demonstrate to the satisfaction of the Environmental and Public Protection Cabinet that no technologically or economically feasible alternatives exist and that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water is located. The approval of a POTW's regional facility plan pursuant to 401 KAR 5:006 shall demonstrate compliance with the alternatives analysis and socioeconomic demonstration for a regional facility. This demonstration shall also include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation.

#### I. Permit Information

Facility Name:	LEDOCIA	KPDES No	KPDES No.: KYG046090		
Address:	HC 75 PO BOX 220	County:	-	LAWRENCE	
City, State, Zip Code:	LEBURN, KY 41831	Receiving '	Water Name:	LT. FK. OF LITTLE BLAINE	

### II. Alternative Analysis

Yes No

1. Has discharge to other treatment works been investigated?

X

(If yes, then indicate which treatment works were considered and the reasons why that discharge to these works is not feasible.)

#### SEE ATTACHMENTS II.1 AND II.1 CONTINUED

Yes No

2. Have other discharge locations been evaluated?

 $\boldsymbol{X}$ 

(If yes, then indicate what other discharge locations have been evaluated and the reasons why these locations are not feasible.)

#### **SEE ATTACHMENT II.2**

#### SECTION II - ALTERNATIVES ANALYSIS

1. Has discharge to other treatment works been investigated? YES (If yes, then indicate which treatment works were considered and the reasons why that discharge to these works is not feasible.)

The applicant is actively engaged in the production of coal throughout the southeastern United States. The applicant employs currently acceptable mining practices and technologies to produce coal by surface and underground mining methods. The proposed treatment works are required to allow the applicant to harvest mineable coal reserves in the most environmentally sound and least impacting manner which is still economically feasible.

Surface and underground coal mining operations must comply with Public Law 95-87. This is commonly referred to as the Surface Mining Control and Reclamation Act (SMCRA) which was passed by Congress on August 3, 1977. The treatment works addressed herein are a part of Title V SMCRA Permit No. 864-0191 as issued by the Kentucky Department for Natural Resources (KYDNR). Kentucky has been granted primacy, with oversight by the United States Office of Surface Mining, to enforce the requirements of SMCRA.

Surface and underground coal mining operations typically result in large areas of disturbance. Storm water runoff from these areas can carry significant volumes of sediment. During the KYDNR permit process the applicant is required to describe a site specific sediment control plan. The plan typically has two parts.

The first part describes how the applicant will perform mining operations in a manner which reduces or limits sediment production. The second part describes physical structures to be placed or constructed upon the ground which are designed to trap sediments within the project area and limit the amount of sediments discharged from the project area. Together these plans and structures are referred to as Best Management Practices (BMP's). In addition to controlling sediments, the BMP's will also aid in the control of trace minerals such as Iron and Manganese.

Please note that for this project water "processing or treatment" is limited to retaining storm water runoff within ponds for a period of time sufficient to allow the settlement of sediment. Individual ponds are designed according to site specific conditions and plans to provide a retention time which results in a discharged water quality within regulatory limits.

By their very nature surface and underground coal mining operations must take place in remote underdeveloped locations. The treatment works required to satisfy KYDNR requirements are typically non-existent or located a prohibitive distance away. Prior to applying for a KYDNR permit the applicant investigated the area to be affected by the proposed surface and underground coal mining operation. These investigations identified no existing treatment works within or adjacent to the project area. Existing treatment works are located at distances environmentally and economically unfeasible to utilize.

The disturbances necessary to collect and convey runoff from the project area to distant treatment works would cause more environmental damage than the on-site treatment works proposed by the applicant. The economics of such a venture would be so great as to place an undo burden upon the applicant.

In addition to maintaining the quality of project area waters SMCRA regulations also require the applicant to maintain the quantity of project area waters. Distant existing treatment works can not be utilized. Collecting and conveying runoff to distant existing treatment works would result in the diminution of project area surface and ground waters. SMCRA regulations do not allow the applicant diminish the quantity of project area surface and ground waters.

#### SECTION II - ALTERNATIVES ANALYSIS

2. Have other discharge locations been evaluated? YES

(If yes, then indicate what other discharge locations have been evaluated and the reasons why these locations are not feasible.)

In addition to following SMCRA regulation, the applicant must also comply with the requirements of the Clean Water Act (CWA) as administered by the United States Army Corps of Engineers (USACE).

The CWA requires the applicant to firstly avoid in-stream disturbances and secondly minimize all unavoidable in-stream disturbances. This means that the applicant must first look to locate as many sediment ponds as possible on upland areas within or immediately adjacent to the project area. Such sediment ponds are commonly referred to as "on-bench" structures. The discharge locations described by the proposed on-bench ponds are dictated by a combination of compliance with the CWA, site topography, project area, and the mining plan. Within and adjacent to the project area there are no other on-bench discharge locations available or feasible for the applicant to utilize and still comply with all SMCRA and CWA requirements.

For mining areas where it is not feasible to control sediments by way of on-bench sediment ponds the applicant must utilize in-stream sediment ponds. Compliance with the CWA requires the applicant to locate in-stream ponds as far upstream as is practicable. In doing so the applicant minimizes the length of natural stream channel impacted by the project. This approach also maintains the integrity of the natural stream channel downstream of the sediment pond. The discharge locations described by the proposed in-stream ponds are dictated by a combination of compliance with the CWA, site topography, project area, and the mining plan. Within and adjacent to the project area there are no other in-stream discharge locations available or feasible for the applicant to utilize and still with all SMCRA and CWA requirements.

Ι	II. Alternative Analysis - continued				
		<u>Yes</u>	<u>No</u>		
3.	Has water reuse or recycle been investigated as an alterative to discharge?	X			
	(If yes, then provide the reasons why it is not a feasible alternative.)				
	SEE ATTACHMENT II.3				
		Yes	<u>No</u>		
4.	Have alternative process or treatment options been evaluated?	X			
	(If yes, then indicate what process or treatment options have been evaluated and provide the reasons they were not feasible.)				
	SEE ATTACHMENT II.4				

DEP Form

### SECTION II - ALTERNATIVES ANALYSIS

3. Has water reuse or recycle been investigated as an alterative to discharge? YES (If yes, then provide the reasons why it is not a feasible alternative.)

SMCRA requires the applicant to propose a fugitive dust control plan. The plan is to be employed during all site preparation, mining, and reclamation operations. The SMCRA approved plan includes the application of water to roads and travel ways to suppress dust. Water for use in dust suppression is drawn from on-bench or in-stream sediment ponds prior discharge.

SMCRA requirements to maintain the quality and quantity of project area surface and ground waters does not allow for any other water reuse or recycle as an alternative to discharge.

### SECTION II - ALTERNATIVES ANALYSIS

4. Have alternative process or treatment options been evaluated? YES (If yes, then indicate what process or treatment options have been evaluated and provide the reasons they were not feasible.)

Please note that for this project water "processing or treatment" is limited to retaining storm water runoff within ponds for a period of time sufficient to allow the settlement of sediment. Surface and underground coal mining operations are required to limit the amount of water borne sediments leaving the project area. Currently accepted technology for the removal of sediment from water is to provide retention time sufficient to allow the sediment to settle prior to water discharge. The required retention time is provided by constructing a sediment pond containing one or more dewatering devices. Individual ponds are designed according to site specific conditions and plans to provide a retention time which results in a discharged water quality within regulatory limits.

The KYDNR, SMCRA, CWA all recognize the construction of sediment ponds to be the best currently acceptable technology for trapping storm water runoff sediments. Sediment ponds can be constructed economically. The resulting environmental damage is limited and can be mitigated during removal of the sediment ponds.

The project area is remote and undeveloped. There are no other options which are as economically feasible and as environmentally practical as the sediment ponds proposed by the applicant.

		Yes	<u>No</u>
5.	Have on-site or subsurface disposal options been evaluated?	X	
	(If yes, then indicate the reasons they were not feasible.)		
	SEE ATTACHMENT II.5		
		<u>Yes</u>	<u>No</u>
6.	Have any other alternatives to lowering water quality been evaluated?	X	
	(If yes, then describe those alternatives evaluated and provide the reasons why these alternatives were not feasible.)		
	SEE ATTACHMENT II.6		
	SEE ATTACHMENT II.6		

DEP Form

### **SECTION II - ALTERNATIVES ANALYSIS**

5. Have on-site or subsurface disposal options been evaluated? YES (If yes, then indicate the reasons they were not feasible.)

All sediments trapped by the ponds will be disposed of within the project area according to plan approved by the KYDNR.

On-site or subsurface disposal of discharge waters would not be in keeping with SMCRA requirements to not diminish project area surface waters. On-site or subsurface disposal of discharge waters is not feasible for this project.

#### SECTION II - ALTERNATIVES ANALYSIS

6. Have any other alternatives to lowering water quality been evaluated? YES (If yes, then describe those alternatives evaluated and provide the reasons why these alternatives were not feasible.)

The disturbance of surface lands is an unavoidable result of surface and underground coal mining operations. However, all SMCRA permits are required and designed to limit the amount of surface disturbed at any one time. As operations progress mined out areas are reclaimed to first reduce and eventually eliminate sediment production.

The BMP's approved as part of the SMCRA permit describe many plans and structures designed to reduce the projects adverse impacts to areas waters.

However, there is no currently feasible technology or methodology which would completely eliminate the applicants' need to propose and construct sediment ponds.

11	111. Socioeconomic Demonstrations					
1.	State the positive and beneficial effects of this facility on the existing environment or a public health problem.?					
	SEE ATTACHMENT III.1					
2.	Describe this facility's effect on the employment of the area.					
:	SEE ATTACHMENT III.2					
3.	Describe how this facility will increase or avoid the decrease of area employment.					
] ·						
	SEE ATTACHMENT III.3					
4.	Describe the industrial or commercial benefits to the community, including the creation of jobs, the raising of additional revenues, the creation of new or additional tax bases.					
	SEE ATTACHMENT III.4					
5.	Describe any other economic or social benefits to the community.					
	SEE ATTACHMENT III.5					

DEP Form -4- Revised November 16, 2004

### SECTION III - SOCIOECONOMIC DEMONSTRATION

1. State the positive and beneficial effects of this facility on the existing environment or a public health problem.

There are no known public health problems which would receive positive or beneficial effects from the operation. However, due to requirements of the CWA, the operation will have positive and beneficial effects upon the existing environment.

In-stream disturbances approved by the KYDNR also require authorization by the USACE. The applicant must secure a CWA Section 404 permit, issued by the USACE, to perform operations which result in the placement of fill material within jurisdictional waters.

The USACE requires the applicant to provide mitigation sufficient to demonstrate that unavoidable in-stream disturbances will result in no net loss of aquatic functions. The required mitigation must provide for functional replacement, compensate for temporal losses, as well as compensate for the predicted rick factor. This is achieved by a combination of on-site and off-site mitigation. All operational disturbances will be reclaimed with all in-stream disturbances being mitigated according to USACE permit requirements. Off-site areas, approved by the USACE, will be mitigated according to USACE permit requirements.

Requirements to provide functional replacement, and compensate for temporal losses and the predicted risk factor, mean the applicant must not only mitigate operational disturbances but must also mitigate off-site areas not disturbed by the operation. This combination of on-site and off-site mitigation will result in positive and beneficial effects on the existing environment.

#### SECTION III - SOCIOECONOMIC DEMONSTRATION

2. Describe this facility's effect on the employment of the area.

The coal mining industry often supports much of the economic activity in the economies of major coal-producing counties in Kentucky. Coal companies often support the activities of their suppliers in the manufacturing, machine shop, construction, and business service industry. Wages earned by the employees of the coal mining companies support their spending for a wide range of retail goods and services throughout the economy.

The total economic impact of the coal mining industry on Kentucky Appalachian coal producing counties includes both direct and "multiplier" effects. The "multiplier" effect occurs as coal companies spend locally on supplies and coal company employees spend on goods and services required by households.

Nearly all applicant employees live in Eastern Kentucky. In addition to maintaining employment for the applicant workforce the operation will maintain, and possibly expand, employment of the area workforce.

### SECTION III - SOCIOECONOMIC DEMONSTRATION

3. Describe how this facility will increase or avoid the decrease of area employment.

The coal mining industry often supports much of the economic activity in the economies of major coal-producing counties in Kentucky. Coal companies often support the activities of their suppliers in the manufacturing, machine shop, construction, and business service industry. Wages earned by the employees of the coal mining companies support their spending for a wide range of retail goods and services throughout the economy.

The total economic impact of the coal mining industry on Kentucky Appalachian coal producing counties includes both direct and "multiplier" effects. The "multiplier" effect occurs as coal companies spend locally on supplies and coal company employees spend on goods and services required by households. The economic impact of the proposed facility will increase, or avoid the decrease, of area employment.

Nearly all applicant employees live in Eastern Kentucky. To maintain a relatively constant employee base the applicant attempts to open new mines as older mines are worked out. When possible the applicant will begin new mines with new work forces to maximize production levels. Most all new workers would come from Eastern Kentucky. The proposed facility will allow the applicant to increase, or avoid the decrease, of area employment.

#### SECTION III - SOCIOECONOMIC DEMONSTRATION

4. Describe the industrial or commercial benefits to the community, including the creation of jobs, the raising of additional revenues, the creation of new or additional tax bases.

The on-line article titled "The Economic Impact of Coal in Appalachian Kentucky" by Jonathan M. Roenker, is based on and draws from the 2001 University of Kentucky Center for Business and Economic Research publication "A Study on the Current Economic Impacts of the Appalachian Coal Industry and its Future in the Region. The research was sponsored by the Appalachian Regional Commission (ARC). From this article the following conclusions are made:

"The importance of the coal mining industry in Appalachia varies from state to state and even county to county. In the coal producing Appalachian counties in Kentucky, the dependence on coal is particularly great. Relative to counties in other coal producing states in the region - particularly states in the northern and southern portions of the ARC Region -, Kentucky coal producing counties are often particularly more dependent on coal as is revealed by the high percentage of coal mining earnings and employment relative to total earnings and employment in those counties. The total economic impact, including both direct and indirect impacts, further reinforces this notion, with the earning impacts in two Kentucky counties exceeding 70% of total county earnings. In several more counties, the earnings impact exceeds 40%."

"This heavy dependence on the coal industry in Kentucky coal producing counties often leaves these counties susceptible to changes in the fortunes of the industry. As a result, losses in coal mining earnings in these counties often leads to increased poverty and dependence on social welfare programs. The Kentucky coal producing counties are also relatively more dependent on social welfare programs, including Temporary Aid to Needy Families and Food Stamps, than other counties in the region. This is once again particularly true when comparing the Kentucky coal producing counties to those counties in the northern and southern portions of the region."

It is clear that if the applicant did not conduct mining operations there would be adverse impacts upon state and local economies. The socioeconomic impact of this alternative would lower the per capita income of the area residents and businesses. Tax monies generated by the mining operations, directly and indirectly, would not be available to aid in the funding or development of programs beneficial to the public.

#### SECTION III - SOCIOECONOMIC DEMONSTRATION

5. Describe any other economic or social benefits to the community.

The majority of surface and minerals owners are members of the local community. The act of surface mining benefits the impacted surface and mineral owners. Individual surface and mineral owners realize a direct monetary gain as a result of mining operations. The applicant must pay royalties for each ton of coal mined to individual surface and mineral owners. These individual surface and mineral owners then have additional monies which they can invest in the local community or can expend purchasing goods and services in the local community.

The state of Kentucky recognizes unmined coal as a taxable asset. Each year mineral owners are assessed unmined minerals taxes. Mineability of the coal is a major factor in calculating the tax. Coal seams are considered mineable if it reasonable that they could be profitably extracted using currently acceptable mining practices and technology. To avoid yearly unmined mineral taxes coal owners are thus economically encouraged to allow surface mining operations which remove all mineable coal seams. Once all mineable coal seams are removed unmined mineral taxes end. The ending of these taxes provide the mineral owners with additional monies which they can invest in the local community or can expend purchasing goods and services in the local community.

Local, state, and federal tax revenues from businesses and individual wage earners; directly and indirectly impacted by the operation; provide monies to aid in the funding or development of programs beneficial to the public. Tax monies can be utilized to promote helath increase the

Wages brought home by employees directly and indirectly impacted by mining activities will financially support the employees and their families. Wages will provide basic human needs such as water, food, clothing, shelter, and healthcare. In specific cases the level of wages and needs may allow the households to engage in non-essential activities and purchase non-essential items which enrich the quality of life.

II	I. Socioeconomic Demonstration - continued		
		Yes	No
6.	Will this project be likely to change median household income in the county?	X	
7.	Will this project likely change the market value of taxable property in the county?	X	
8.	Will this project increase or decrease revenues in the county?	X	
9.	Will any public buildings be affected by this system?		X
10.	How many households will be impacted by this project? SEE ATTACHMENT III.10		
11.	How will those households be impacted?		
	SEE ATTACHMENT III.11		
		Yes	<u>No</u>
12.	Does this project replace any other methods of sewage treatment to existing facilities?		X
	(If so describe how.)		
	SEE ATTACHMENT III.12		
		-	
		<u>Yes</u>	<u>No</u>
13.	Does this project treat any existing sources of pollution more effectively?	X	
	(If so describe how.)		
	SEE ATTACHMENT III.13		

DEP Form -5- Revised November 16, 2004

### SECTION III - SOCIOECONOMIC DEMONSTRATION

10. How many households will be impacted by this project?

It is impossible to calculate exactly the number of households impacted by this project. All households of the applicant owners and employees will be directly impacted. All households of owners and employees of suppliers in the manufacturing, machine shop, construction, and business service industry will be directly impacted. All households of owners and employees of goods and services are indirectly impacted as companies and employees spend wages locally.

### SECTION III - SOCIOECONOMIC DEMONSTRATION

### 11. How will those households be impacted?

Wages brought home by employees directly and indirectly impacted by mining activities will financially support the employees and their families. Wages will provide basic human needs such as water, food, clothing, shelter, and healthcare. In specific cases the level of wages and needs may allow the households to engage in non-essential activities and purchase non-essential items which enrich the quality of life.

#### SECTION III - SOCIOECONOMIC DEMONSTRATION

12. Does this project replace any other methods of sewage treatment to existing facilities? NO (If so describe how.)

Treatment works addressed herein are also a part of Title V Surface Mining Control and Reclamation Act (SMCRA) Permit No. 864-0191 as issued by the Kentucky Department for Natural Resources (KYDNR). Kentucky has been granted primacy, with oversight by the United States Office of Surface Mining, to enforce the requirements of SMCRA.

Surface and underground coal mining operations typically result in large areas of disturbance. Storm water runoff from these areas can carry significant volumes of sediment. During the KYDNR permit process the applicant is required to describe a site specific sediment control plan. The plan typically has two parts.

The first part describes how the applicant will perform mining operations in a manner which reduces or limits sediment production. The second part describes physical structures to be placed or constructed upon the ground which are designed to trap sediments within the project area and limit the amount of sediments discharged from the project area. Together these plans and structures are referred to as Best Management Practices (BMP's). In addition to controlling sediments, the BMP's will also aid in the control of trace minerals such as Iron and Manganese.

Please note that for this project water "processing or treatment" is limited to retaining storm water runoff within ponds for a period of time sufficient to allow the settlement of sediment. The activities and facilities proposed by the applicant do not produce sewage nor do they require the treatment of existing sewage facilities. Therefore sewage treatment is not a purpose or goal of the applicant.

#### SECTION III - SOCIOECONOMIC DEMONSTRATION

13. Does this project treat any existing sources of pollution more effectively? YES (If so describe how.)

Legal right of entry agreements executed between the applicant and surface owners within areas proposed for mining generally include language related to timber removal. Surface owners are provided a time frame in which they can remove and sale the timber. These timber removal activities are unrelated to the applicant's mining operations and therefore are subject only to existing state and federal logging guidelines. Logging related disturbances result in unvegetated areas, unstable slopes, increased storm water flows, and increased sedimentation of area streams.

Surface mining activities occasionally occur within areas disturbed prior to the requirements of SMCRA. These activities generally result in unvegetated areas, unstable slopes, increased storm water flows, and increased sedimentation of area streams.

Facilities proposed by the applicant will control storm water flows and trap sediments from areas disturbed by logging operations. For previously disturbed areas within the limits the proposed operation, reclamation and revegetation activities required by the KYDNR will establish a proper vegetative cover, stabilize slopes, reduce storm water flows, and reduce sediment production.

There are no existing facilities which treat these existing sources of pollution. Therefore the facilities and plans proposed by the applicant will more effectively treat existing sources of pollution.

П	. Socioeconomic Demonstration - continued				
				Yes	<u>No</u>
4.	Does this project eliminate any other sources of discharge or pollutant	s?		X	
	(If so describe how.)				
	SEE ATTACHMENT III.14				
15.	How will the increase in production levels positively affect the socioe	conomic condition of	the area?		
	SEE ATTACHMENT III.15				
16.	How will the increase in operational efficiency positively affect the soc	ioeconomic condition	of the area?		
	SEE ATTACHMENT III.16				
IV	Certification: I certify under penalty of law that this document and a	Lattachments were pr	enared under	my direc	tion or
sur	ervision in accordance with a system designed to assure that qualified per	sonnel properly gather	r and evaluate	the infor	mation
gat	mitted. Based on my inquiry of the person or persons who manage the hering the information, the information submitted is, to the best of my k	mowledge and belief,	true, accurate	, and con	nplete.
I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.					
	me and Title: Scott A. Deppe, Vice President	Telephone No.:	(606)	785-0220	)
	Signature: Slow a. Seph	Date:	6-15	-06	

### SECTION III - SOCIOECONOMIC DEMONSTRATION

14. Does this project eliminate any other sources of discharge or pollutants? YES (If so describe how.)

As described in the response to previous question 13, the proposed mine area usually includes existing pollution discharges as a result of areas previously disturbed by logging operations and areas disturbed prior to the requirements of SMCRA.

The applicant must eliminate all sources of pollution within the limits of the KYDNR permit prior to final bond release. Final bond release is the point at which the applicant has being officially released of all SMCRA environmental obligations. Any existing pollution discharges within the limits of the KYDNR permit will also be eliminated.

### SECTION III - SOCIOECONOMIC DEMONSTRATION

15. How will the increase in production levels positively affect the socioeconomic condition of the area?

Allowing the applicant to increase production levels at the proposed facilities will positively impact the socioeconomic condition of the area.

Local, state, and federal tax revenues from businesses and individual wage earners; directly and indirectly impacted by the operation; provide monies to aid in the funding or development of programs beneficial to the area public.

Wages brought home by employees directly and indirectly impacted by mining activities will financially support the employees and their families. Wages will provide basic human needs such as water, food, clothing, shelter, and healthcare. In specific cases the level of wages and needs may allow the households to engage in non-essential activities and purchase non-essential items which enrich the quality of life.

### SECTION III - SOCIOECONOMIC DEMONSTRATION

16. How will the increase in operational efficiency positively affect the socioeconomic condition of the area?

All proposed facilities will are only those necessary and required for the applicant to conduct the business of surface coal mining. These facilities have been designed according to currently acceptable mining practices and technologies. These facilities will allow the applicant to harvest mineable coal reserves in the most efficient, most environmentally sound, and least impacting manner which is still economically feasible.

As described under previous responses, the positive socioeconomic benefits of allowing the applicant to construct and utilize the proposed facilities are many. The area is heavily dependent upon the economic benefits of the coal industry. Taxes and wages directly and indirectly related to the operation will provide numerous opportunities for private and public benefits.